

**MINISTRY OF HEALTH OF UKRAINE
NATIONAL O.O. BOHOMOLET'S MEDICAL UNIVERSITY
DEPARTMENT OF PEDIATRICS №2**

**GUIDELINES
to practical (seminar) classes
FOR STUDENTS**

Educational discipline Pediatrics with children's infectious diseases
Discipline "Health care"
Specialty 222 "Medicine"
Department of Pediatrics No. 2

APPROVED at the meeting of the Department of Pediatrics No. 2 from August 28 , 2023,
protocol №1

Reviewed and approved by: Center for Pediatric Disciplines
from August 28 , 2023, protocol № 1

Lesson topic: Prematurely born children. Small for gestational age babies.

Competencies:

- To analyze the etiological factors of premature births and delays in intrauterine development of the fetus.
- Assess the compliance of the physical development of a prematurely born child with the gestation period .
- Draw up an examination plan and analyze the data of laboratory and other research methods (general blood test, biochemical blood test, lactate, procalcitonin, X-ray, neurosonogram).
- Demonstrate mastery of the principles of feeding and treatment of pathological conditions in premature babies and children with intrauterine growth retardation.
- Justify the diagnosis and provide assistance to premature newborns and children with intrauterine growth retardation with manifestations of hypothermia, apnea, and hypoglycemia.
- Make a forecast regarding the life and future development of a premature child and a child with a delay in intrauterine development.
- Demonstrate mastery of the bioethical principles of medical specialist and the principles of professional subordination in neonatology .

Purpose: Formation of professional competences to achieve program results of training on diagnosis, treatment and prevention of diseases and their complications in prematurely born children and children with intrauterine development delay.

Equipment: a newborn baby dummy, a set for artificial lung ventilation and oxygen therapy, a neonatal stethoscope, a pulse oximeter , diapers, disposable gloves, an antiseptic for treating hands.

Lesson plan and organizational structure

The name of the stage	Description of the stage	Levels of assimilation	Time
Setting educational goals and motivation Control of the output equal knowledge , skills , abilities	Organizational issues. Test control Individual orally poll Frontal conversation Motivation training : Premature birth of children remains one of the most important health problems worldwide. Deep morpho -functional immaturity is the main cause of neonatal mortality. Premature births do not tend to decrease, so the problem of intensive care and nursing of prematurely born children, especially with extremely low body weight, remains relevant, despite the introduction of new technologies for pregnancy management, childbirth and medical care for children.	*	60 min

	<p>Control of the initial level of knowledge (test control and oral survey):</p> <p>1. In a newborn girl from the 1st pregnancy of the 1st birth at a gestation period of 35 weeks, who was born with a weight of 2600 g in a satisfactory condition, at the end of the 1st day of life, lethargy, muscle hypotonia and hyporeflexia appeared, poor sucking, apnea up to 3 seconds. When checked with a glucotest, the glucose level is 2.2 mmol/l. What should emergency care be?</p> <p>A. Increase the frequency of feedings .</p> <p>B. Control the level of glucose in the blood.</p> <p>C. Start an intravenous infusion of 10% glucose solution at a rate of 6-8 mg/kg/minute.</p> <p>D. Immediately start intravenous administration of 10% glucose solution at the rate of 2 ml/kg as a stream into a peripheral vein for 5-10 minutes.</p> <p>E. Transfer the child to parenteral nutrition.</p> <p>2. A premature boy from the 1st pregnancy of the 1st birth at a gestation period of 34 weeks, who was born with a body weight of 2500 g, had an apnea attack on the second day of life. What emergency care should be given to the child immediately?</p> <p>A. Carry out tactile stimulation of breathing along the child's back for 10 seconds.</p> <p>B. Start artificial lung ventilation using a bag and a mask.</p> <p>C. Carry out intubation and artificial ventilation of the lungs through an intubation tube.</p> <p>D. Administer caffeine citrate intravenously at a dose of 20 mg/kg.</p> <p>E. Administer euphylin at a dose of 8 mg/kg intravenously.</p> <p>3. A newborn girl from the 1st pregnancy of the 1st birth at a gestation period of 36 weeks, who was born with a body weight 2600 g in a satisfactory condition, was transferred to a joint stay with her mother. During the examination by a neonatologist on the second day of life, lethargy, muscle hypotonia and hyporeflexia, poor sucking were found. Temperature control</p>		
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	<p>was carried out, which was 36.3. What should emergency care be?</p> <p>A. Immediately begin rewarming the child with skin-to-skin contact.</p> <p>B. Start warming the child with heating pads.</p> <p>C. Transfer the child to the intensive care unit and place the child on a heated resuscitation table.</p> <p>D. Stop enteral feeding and start intravenous administration of 10% glucose solution.</p> <p>E. Carry out a control temperature measurement after 30 minutes.</p> <p>4. In a premature girl from the 1st pregnancy, which was complicated by isthmus -cervical insufficiency, the 1st delivery at a gestation period 28 weeks with a body weight 1000 g, the condition from the moment of birth is assessed as very severe due to respiratory failure, cerebral depression, unstable hemodynamics, in connection with which the child is on artificial lung ventilation. On the second day of life, a decrease in the level of hemoglobin to 120 g/l was detected. Preliminary diagnosis: intraventricular hemorrhage. What method of confirmation of this diagnosis is the most appropriate?</p> <p>A. Neurosonography .</p> <p>B. Lumbar puncture.</p> <p>C. Computed tomography.</p> <p>D. Magnetic resonance imaging.</p> <p>E. Dopplerography .</p> <p>5. Premature boy from the 1st pregnancy, which was complicated by late gestosis, the 1st childbirth, mother blood group -A(II), rhesus positive affiliation, the gestation period 39 weeks of gestation with a birth weight 2400 g, height 48 cm, hematocrit level on the first day of life was 0.69. On the second day of life, the child developed jaundice, the intensity of which progressively increased. The level of bilirubin on the third day of life is 240 $\mu\text{mol/l}$ due to the indirect fraction. What method of treatment of hyperbilirubinemia should be prescribed in this case?</p>		
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	<p>A. Infusion therapy with 10% glucose solution</p> <p>B. Phototherapy.</p> <p>C. Operation of replacement blood transfusion.</p> <p>D. Appointment of glucocorticoids .</p> <p>E. Appointment of enterosorbents .</p>		
<p>The main stage Analysis of theoretical material</p> <p>Treatment of patients</p>	<p>Methods of skill formation: professional training, solutions to tests, typical problems</p> <p>a) demonstration of the thematic patient by the teacher;</p> <p>b) independent work - care of newborns (taking anamnesis, objective observation, working out a preliminary diagnosis, drawing up an examination and treatment plan);</p> <p>c) clinical examination of the patient with the participation of the teacher. Differential diagnosis, evaluation of clinical data, results of laboratory and instrumental research, treatment;</p> <p>d) acquisition and practice of practical skills</p>	<p>**</p> <p>*</p> <p>**, ***</p> <p>*, **, ***</p> <p>**, ***</p>	120 min
<p>The final stage</p> <p>Control of the final level of training</p> <p>General evaluation of the student's educational activity</p> <p>Informing students about the topic of the next lesson</p>	<p>Skills control methods : individual control of practical skills skills and their results . Analysis and assessment results work _</p> <p><i>Control of the final level of training (situational problems):</i></p> <p>Task 1</p> <p>A premature boy was born from the third pregnancy at 32 weeks of gestation, body weight 1800 g, length 44 cm. The first two pregnancies were terminated by medical abortion. Apgar score at 1 minute 6 , at 5 minutes 7. The subcutaneous tissue is underdeveloped, the auricles are soft , the skin is cyanotic. Lanugo on the trunk and limbs. Blood glucose 1.9 mmol/l.</p> <p>Question:</p> <ol style="list-style-type: none"> 1. Previous diagnosis? 2. What urgent measures should be taken? 3. What morphological signs of prematurity does this child have? 4. Classify by body weight. Assess the conformity of body mass and length with the term of gestation . <p>Answer.</p>	<p>*, **</p>	60 min

	<p>1) Hypoglycemia in a premature newborn at 32 weeks of gestation with low body weight.</p> <p>2) Prescribe intravenous glucose 10% 4 ml in a stream , then drip 6 mg/kg/min.</p> <p>3) The subcutaneous base is underdeveloped, soft auricles, lanugo on the body and limbs.</p> <p>Task 2</p> <p>During the examination of a child with a gestational age of 36 weeks, who was born in a satisfactory condition with a weight of 2600 g and was in a joint stay with the mother, on the second day of life, muscle hypotonia, hyporeflexia , pale skin, and a tendency to bradycardia were observed. The skin is cold to the touch. When measuring the body temperature, 36.0°C was determined.</p> <p>Question:</p> <ol style="list-style-type: none"> 1. Previous diagnosis? 2. Morphological signs of the pathological process. 3. Emergency care. <p>Answer. 1) Hypothermia in a premature baby with a gestational age of 36 weeks.</p> <p>2) Temperature 36.0°C, muscle hypotonia, hyporeflexia , pale skin, tendency to bradycardia.</p> <p>3) Start skin-to-skin contact with the mother, check the temperature in the room: if the temperature in the room is low, heat it with additional heaters; check blood glucose level. In case of hypoglycemia, start correcting this condition; continue breastfeeding the child. Carry out a control measurement of body temperature 15-30 minutes after the activities. If the result is less than 36.5°C, continue warming the child and measuring the body temperature every 15-30 minutes until the child's body temperature stabilizes and after receiving two consecutive results of measuring the child's body temperature > 36.5°C.</p>		
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* Introductory , ** reproducible , *** reconstructive , **** creative levels assimilation _

Literature:

1. Neonatology: textbook : in 3 volumes/ T.K. Znamenska , Y.G. Antipkin , M.L. Aryaev , etc .; under the editorship T.K. Znamenska .- Lviv: T.V. Marchenko Publisher, 2020.- T.2.-p.114-131
2. Unified clinical protocol of secondary (specialized) and tertiary (highly specialized) medical " Enteral " aid food premature children ", approved by the Order of the Ministry of Health of Ukraine dated 05.05.2021 #870
<https://neonatology.org.ua/news/docs/2021/05/225-nakaz-moz-ukraini-870-enteralne-kharchuvan-nya-nedonoshenikh-nemovlyat>
3. Unified clinical protocol of secondary (specialized) and tertiary (highly specialized) medical aid " Respiratory distress syndrome in premature born children ", approved by the Order of the Ministry of Health of Ukraine dated 05.05.2021 No. 873
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4. Unified clinical protocol of secondary (specialized) and tertiary (highly specialized) medical of help " Parenteral food newborns children ", approved by the Order of the Ministry of Health of Ukraine dated 04/18/2022
http://journal.medlib.dp.gov.ua/wpcontent/uploads/2022/05/N_650_18_04_2022_dod.pdf
5. Protocol of medical care for a newborn a child with a low mass bodies at birth , approved by the Order of the Ministry of Health of Ukraine dated 08/29/2006 #584
<http://ukraine.uapravo.net/data/base05/ukr05859.htm>
6. Unified clinical protocol "Initial, resuscitation and after resuscitation help newborns in Ukraine ", approved by the Order of the Ministry of Health of Ukraine dated 03/28/2014 No. 225
<http://document.ua/pro-zatverdzhennja-ta-vprovadzhennja-mediko-tehnologichnih-d-doc190536.html>
- 7 . Foundations pediatrics according to Nelson: in 2 volumes. Volume 1 / Karen J. Marcante , Robert M. Kligman ; translation of the 8th Eng. publication _ Scientific translation editors V.S. Berezenko , T.V. Rest Kyiv : VSV "Medicine", 2019. T 1-378 p ., p . 2 23 -2 46
- 8 . Nelson Textbook of Pediatrics, 2-Volume Set, 20th Edition, 2020 by Robert M. Kliegman , Bonita MD Stanton, Joseph St. Geme and Nina F Schor, 5315 p. <https://www.elsevierhealth.com/nelson-textbook-of-pediatrics-2-volume-set-9781455775668.html>

Questions for student self-preparation for practical training :

1. Modern principles perinatal care.
2. The main stages of medical care for prematurely born to children
3. The main ones requirements for premature birth
4. Modern technologies of medical help for prematurely born children with gestational aged <32 weeks.
5. The main pathological states of prematurely born children with very low by mass body at birth .
6. Intense therapy for children with very low by mass body at birth.
7. Enteral feeding for children with gestational age aged <32 weeks.
8. Parenteral feeding for prematurely born children _
9. Advisory -catamnestic observation of prematurity born a child

The methodical guideline was compiled by assoc. pr. Shevtsova T.I.